

AD-A080 001

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND MS--ETC F/G 4/2
19702A GSRS, MISSILE NUMBER 311, ROUND NUMBER B-39, 10 SEPTEMBER--ETC(U)

SEP 79

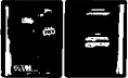
ERADCOM/ASL-DR-1067

NL

UNCLASSIFIED

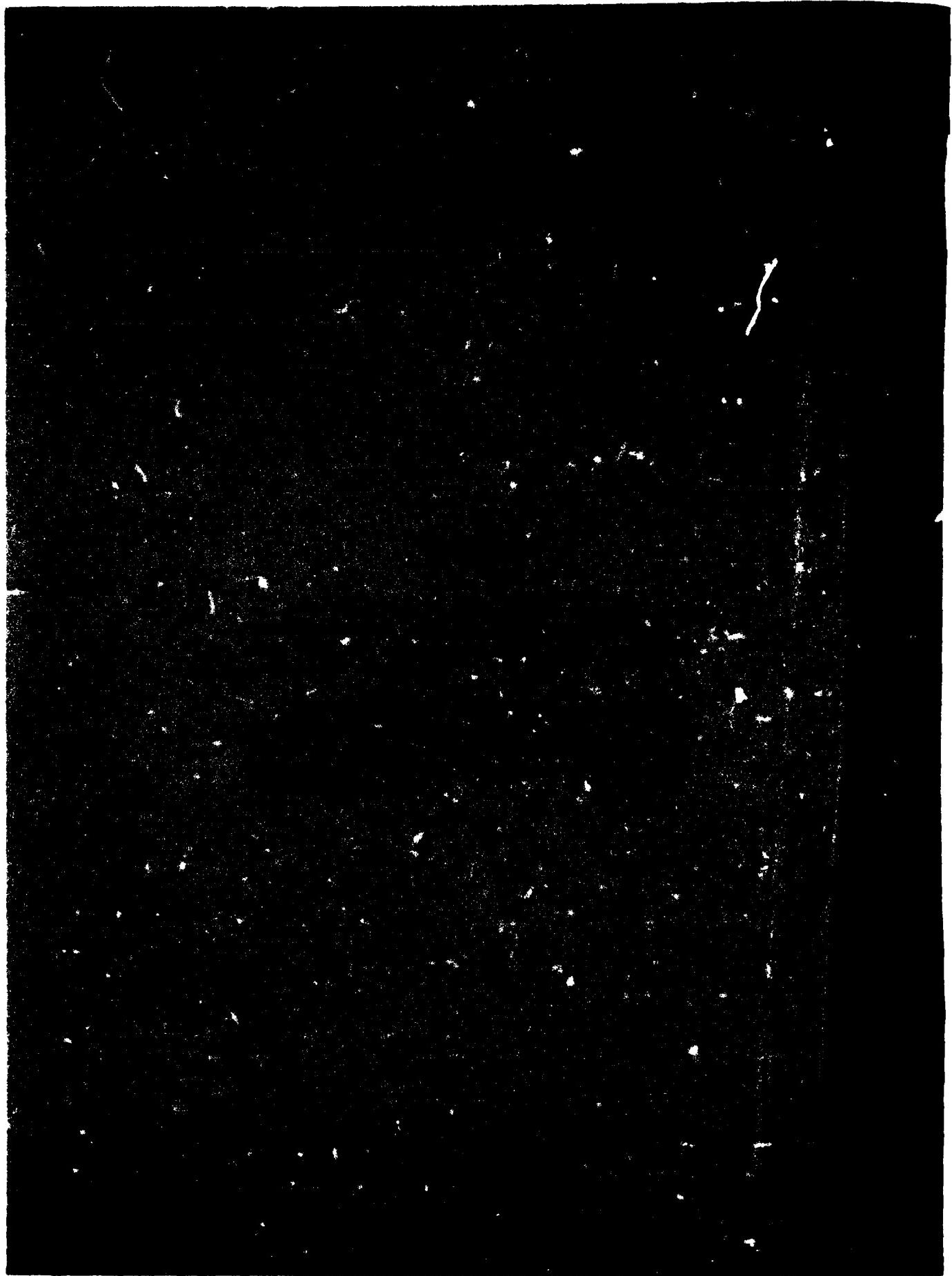
for

40
498200



END
DATE
FILED
2-80
RDC

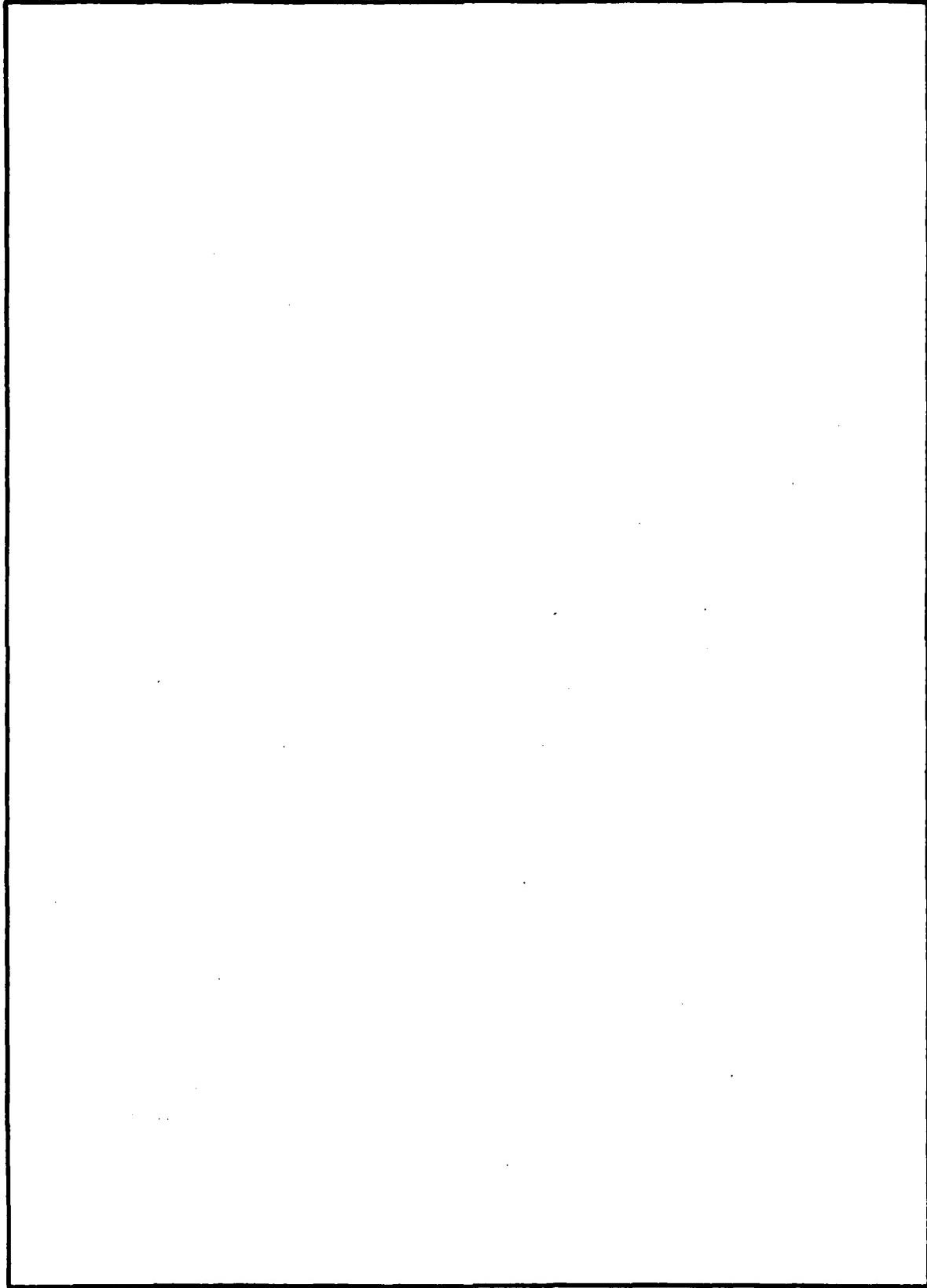
ADA080001



SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR 1067	2. GOVT ACCESSION NO. 14 ERA ICS/ASH-L1-1067	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 19702A GSRS, Missile Number 311, Round Number B-39, 10 September 1971.	5. TYPE OF REPORT & PERIOD COVERED	
7. AUTHOR(s) White Sands Meteorological Team	6. PERFORMING ORG. REPORT NUMBER DA Task 1P665702D127-02	
9. PERFORMING ORGANIZATION NAME AND ADDRESS	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 12-1	
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Electronics Research & Development Cmd Atmospheric Sciences Laboratory White Sands Missile Range, NM 88002	12. REPORT DATE September 1979	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) US Army Electronics Research & Development Cmd Adelphi, MD 20783	13. NUMBER OF PAGES 21	
16. DISTRIBUTION STATEMENT (of this Report) 9) Meteorological data	15. SECURITY CLASS. (of this report) UNCLASSIFIED	
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) Approved for public release; distribution unlimited.		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) 1. Ballistics 2. Meteorology 3. Wind		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of 19702A GSRS, Missile Number 311, Round Number B-39 are presented in tabular form.		

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

A large, empty rectangular box occupies most of the page, indicating a significant portion of the document has been redacted or removed.

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

CONTENTS

INTRODUCTION-----	1
DISCUSSION-----	1
MAP-----	2

TABLES:

1. Surface Observation taken at 1108 MDT at LC-33-----	3
2. Anemometer-Measured Wind Speed and Direction, LC-33 Fixed Pole, taken at 1107 MDT-----	4
3. Anemometer-Measured Wind Speed and Direction, Tower Levels 1, 2, 3, and 4, taken at 1107 MDT-----	5
4. LC-33 Pilot-Balloon-Measured Wind Data at 1050 MDT-----	6
5. LC-33 Pilot-Balloon Measured Wind Data at 1107 MDT-----	7
6. Nick Site Pilot-Balloon-Measured Wind Data at 1053 MDT-----	8
7. Nick Site Pilot-Balloon-Measured Wind Data at 1103 MDT-----	9
8. SMR Significant Level Data at 1000 MST-----	10
9. SMR Upper Air Data at 1000 MST-----	12
10. SMR Mandatory Levels at 1000 MST-----	17

Accession For	
NTIS GRA&I	
DDC TAB	
Unannounced	
Justification _____	
By _____	
Distribution/	
Availability Codes	
Dist	Available and/or special

INTRODUCTION

19702A GSRS , Missile Number 311 , Round Number B-39 , was launched from LC-33 , White Sands Missile Range (WSMR) , New Mexico , at 1107 MDT 10 September 1979. The scheduled launch time was 1100 MDT

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}$ C), relative humidity, dew point ($^{\circ}$ C), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

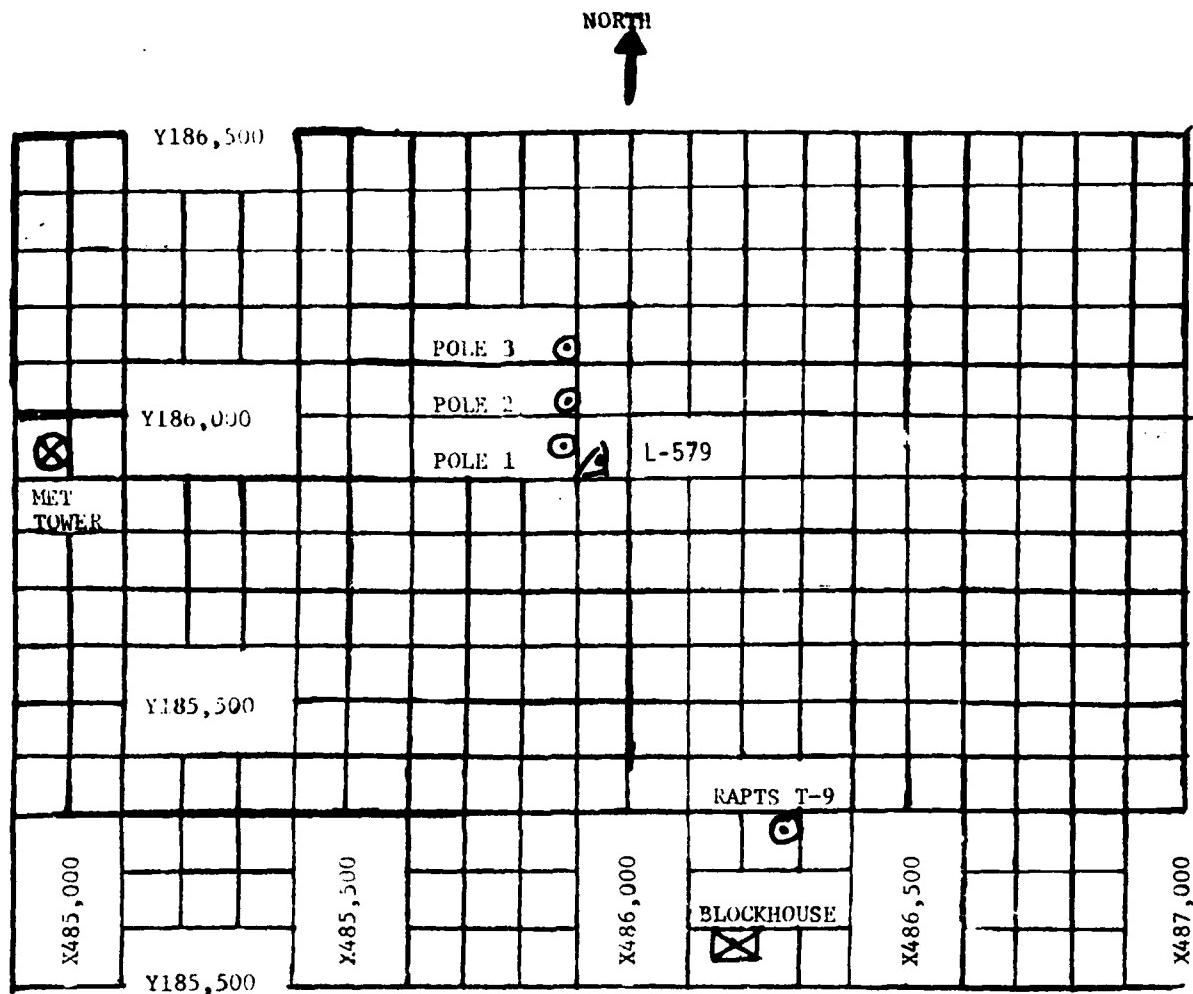
SITE AND ALTITUDE

LC-33 2160 Meters
NICK 2160 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 97,000 feet in 500-feet increments.

SITE AND TIME

SMR 1000 MST



1. MET TOWER - 4 Bendix Model T-20 Anemometers at 12 ft, 62 ft, 102 ft, and 202 ft with E/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders.
 - (a) Pole #1 - 38.7 ft
 - (b) Pole #2 - 53.0 ft
 - (c) Pole #3 - 83.6 ft
3. RAPTS T-9 Radar Automatic Pilot-Balloon Tracking System T-9 Radar.

TABLE 1. Surface Observations taken at 1107 MDT,
10 September 1979, at LC-33, 19702A GSRS,
Missile Number 311, Round Number B-39.

ELEVATION	3977.30	FT/MSL
PRESSURE	880.7	MBS
TEMPERATURE	26.0	°C
RELATIVE HUMIDITY	37	%
DEW POINT	10.1	°C
DENSITY	1011	GM/M ³
WIND SPEED	03	KTS
WIND DIRECTION	165	DEGREES
CLOUD COVER	CLEAR	

LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30		CALM	-30	161	01	-30	128	02
-20	142	02	-20	156	01	-20	123	02
-10	141	03	-10	120	03	-10	145	03
0.0	116	05	0.0	118	03	0.0	151	03
+10	115	04	+10	129	03	+10	130	04

POLE #1 = X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL

POLE #2 = X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL

POLE #3 = X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL

TABLE 2

TYPE 19702A GSRS MISSILE NO. 311 ROUND NO. B-39

LAUNCHED FROM LC-33 DATE 10 September 1979 TIME 1107 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1 12 Feet			LEVEL #2 62 Feet		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	230	02	-30	M	M
-20	228	03	-20	M	M
-10	219	03	-10	M	M
0.0	231	04	0.0	M	M
+10	208	04	+10	M	M
LEVEL #3 102 Feet			LEVEL #4 202 Feet		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	223	03	-30	185	01
-20	222	04	-20	186	03
-10	226	04	-10	192	04
0.0	227	04	0.0	192	04
+10	214	04	+10	186	03

WTSM COORDINATES: X484,982.64 Y185,057.73 H3983.00 (base)

TABLE 3

TYPE 19702A GSRS MISSILE NO. 311 ROUND NO. B-39

LAUNCHED FROM LC-33 DATE 10 September 1979 TIME 1107 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

PILOT BALLOON MEASURED WIND DATA

TABLE 4

RELEASED FROM LC-33 DATE 10 September 1979 TIME 1050 MDT

RELEASE POINT COORDINATES (WSTM) X=486.036.24 Y=182,350.16 H=3977.30

MISSILE TYPE 19702A GSRS MISSILE NO. 311 ROUND NO. B-39

MISSILE LAUNCHED FROM LC-33 DATE 10 September 1979 TIME 1107 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC		CALM
60	168	04
120	171	05
180	174	06
240	177	08
300	162	07
360	146	06
420	131	05
480	115	04
540	126	05
600	137	06
660	148	06
720	158	07
780	156	08
840	153	09
900	150	09
960	147	10
1020	140	09
1080	132	07

HEIGHTS AGL	DIRECTION DEGREES	SPEED KTS
1140	124	06
1200	116	04
1260	103	05
1320	089	05
1380	075	06
1440	061	06
1500	059	07
1560	056	07
1620	054	08
1680	051	08
1740	062	10
1800	072	12
1860	082	14
1920	092	15
1980	090	14
2040	088	12
2100	086	10
2160	083	08
2220		

PILOT BALLOON MEASURED WIND DATA

TABLE 5

RELEASED FROM LC-33 DATE 10 September 1979 TIME 1107 MDT

RELEASE POINT COORDINATES (WSTM) X=486,037.24 Y=182,350.16 H=3977.30

MISSILE TYPE 19702A GSRS MISSILE NO. 311 ROUND NO. B-39

MISSILE LAUNCHED FROM LC-33 DATE 10 September 1979 TIME 1107 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC		CALM
60	156	03
120	152	04
180	148	05
240	143	06
300	159	05
360	174	03
420	190	03
480	205	01
540	186	02
600	166	03
660	147	04
720	127	04
780	123	04
840	119	04
900	115	04
960	110	04
1020	114	05
1080	117	06

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
1140	120	06
1200	123	07
1260	115	07
1320	107	06
1380	099	06
1440	090	06
1500	087	07
1560	084	09
1620	081	10
1680	078	12
1740	082	13
1800	085	14
1860	088	15
1920	091	17
1980	090	15
2040	088	13
2100	086	11
2160	084	09
2220		

PILOT BALLOON MEASURED WIND DATA

TABLE 6

RELEASED FROM NICK DATE 10 September 1979 TIME 1053 MDTRELEASE POINT COORDINATES (WSTM) X= 470,734.56 Y= 255,775.64 H= 4126.57MISSILE TYPE 19702A GSRS MISSILE NO. 311 ROUND NC. B-39MISSILE LAUNCHED FROM LC-33 DATE 10 September 1979 TIME 1107 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC		CALM
60	033	01
120	065	01
180	097	02
240	129	02
300	126	02
360	123	02
420	120	01
480	117	01
540	133	02
600	149	03
660	165	03
720	180	04
780	178	05
840	176	05
900	174	06
960	171	06
1020	158	05
1080	145	04

HEIGHTS AGL	DIRECTION DEGREES	SPEED KTS
1140	132	03
1200	118	03
1260	105	03
1320	091	03
1380	077	03
1440	063	03
1500	066	05
1560	069	06
1620	072	07
1680	074	08
1740	077	09
1800	080	09
1860	083	09
1920	085	09
1980		
2040		
2100		
2160		
2220		

PILOT BALLOON MEASURED WIND DATA

TABLE 7

RELEASED FROM NICK DATE 10 September 1979 TIME 1103 MDTRELEASE POINT COORDINATES (WSTM) X= 470,734.56 Y= 255,775.64 H= 4126.57MISSILE TYPE 19702A GSRS MISSILE NO. 311 ROUND NO. B-39MISSILE LAUNCHED FROM LC-33 DATE 10 September 1979 TIME 1107 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC		CALM
60	024	02
120	048	03
180	072	05
240	096	06
300	109	06
360	121	07
420	133	07
480	145	08
540	140	07
600	135	06
660	130	06
720	125	05
780	128	05
840	130	04
900	133	03
960	135	03
1020	127	03
1080	119	03

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
1140	111	04
1200	103	04
1260	092	04
1320	080	04
1380	068	05
1440	056	05
1500	059	06
1560	061	07
1620	063	08
1680	065	09
1740	072	09
1800	078	09
1860	084	09
1920	090	09
1980	090	08
2040	090	07
2100	090	06
2160	090	04

STATION ALTITUDE 3997.30 FEET MSL
 10 SEP. 79 1000 HRS MST
 ASCENSION NO. 302

SIGNIFICANT LEVEL DATA
 2530060302
 S M R
 TABLE 8

GEODETIC COORDINATES
 32°48'03.4" LAT DEG
 106°42'30.7" LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE DEGREES CENTIGRADE	AIR DEWPPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
880.1	3997.3	26.3	6.9	29.0
850.0	4996.3	21.7	6.8	38.0
838.4	5387.6	21.5	7.0	39.0
808.8	6405.3	18.2	6.1	45.0
759.8	8152.2	14.1	3.8	50.0
750.2	8504.6	13.7	3.8	51.0
700.0	10407.3	8.7	1.4	60.0
674.8	11402.1	7.3	-8.7	31.0
656.4	12148.7	6.8	-19.7	13.0
620.8	13653.0	7.0	-21.4	11.0
594.6	14812.0	4.7	-23.2	11.0
577.2	15604.1	2.7	-24.8	11.0
552.2	16777.5	1.1	-25.1	12.0
500.0	19379.2	-3.6	-28.8	12.0
456.4	21729.6	-8.1	-30.8	14.0
419.4	23868.3	-13.3	-36.6	12.0
400.0	25047.5	-16.4	-38.3	13.0
370.0	26959.1	-21.2	-40.9	15.0
349.6	28340.5	-23.5	-43.4	14.0
323.6	30173.4	-28.2	-47.3	14.0
311.0	31106.8	-30.7	-49.3	14.0
300.0	31945.1	-32.8		
275.0	33943.3	-37.3		
250.0	36096.7	-40.6		
236.4	37343.4	-43.7		
231.2	37835.1	-44.4		
200.0	40994.8	-50.2		
178.8	43380.5	-55.0		
150.0	47012.4	-63.0		
130.2	49851.2	-68.1		
109.4	53264.4	-72.3		
100.0	55011.8	-71.5		
90.6	56930.8	-72.6		
87.6	57587.9	-70.0		
76.2	60353.5	-66.0		
70.0	62058.6	-64.8		
60.4	65076.4	-58.5		
50.0	69014.2	-57.1		
30.0	79815.0	-52.5		
20.0	88661.4	-43.6		

STATION ALTITUDE 3997.30 FEET MSL
10 SEP. 79 1000 HRS MST
ASCENSION NO. 302

SIGNIFICANT LEVEL DATA

2530060302

S M R

GEODETIC COORDINATES
32°48'03" LAT DEG
106°42'30" LON DEG

TABLE 8 Cont.

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR DEWPONT DEGREES CENTIGRADE	REL.HUM. PERCENT
MILLIBARS	MSL FEET		
13.6	97273.5	-42.3	

STATION ALTITUDE 3997.30 FEET MSL
10 SEP. 79 1000 HRS MST
ASCENSION NO. 302

UPPER AIR DATA
2530060302
S M R

GEOGRAPHIC COORDINATES
32°48'34" LAT DEG
106°42'30" LON DEG

TABLE 9

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT DEGREES	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3997.3	880.1	26.3	6.9	29.0	1019.5	675.6	100.0	1.9	1.000269
4000.0	880.0	26.3	6.9	29.0	1019.4	675.6	100.2	1.9	1.000269
4500.0	864.8	24.0	7.0	33.5	1009.5	673.0	131.4	2.5	1.000268
5000.0	849.9	21.7	6.8	38.0	999.7	670.4	148.3	3.5	1.000266
5500.0	835.1	21.1	6.9	39.7	984.1	669.8	157.3	4.6	1.000263
6000.0	820.5	19.5	6.5	42.6	972.3	668.0	160.2	5.8	1.000259
6500.0	806.1	18.0	6.0	45.3	960.3	666.2	159.4	7.1	1.000256
7000.0	791.8	16.8	5.3	46.7	947.2	664.8	156.8	7.4	1.000251
7500.0	777.7	15.6	4.7	48.1	934.3	663.4	152.7	7.2	1.000247
8000.0	763.9	14.5	4.1	49.6	921.6	662.0	136.3	6.5	1.000243
8500.0	750.3	13.7	3.8	51.0	907.5	661.2	111.4	6.5	1.000239
9000.0	736.8	12.4	3.2	53.3	895.3	659.6	89.2	8.6	1.000235
9500.0	723.5	11.1	2.6	55.7	883.3	658.1	77.0	11.6	1.000231
10000.0	710.5	9.8	1.9	58.1	871.5	656.5	73.3	11.6	1.000227
10500.0	697.6	8.6	.6	57.3	859.7	655.0	71.2	11.1	1.000222
11000.0	684.9	7.9	-4.0	42.7	846.9	653.9	77.6	8.9	1.000210
11500.0	672.4	7.2	-9.7	28.6	834.0	652.9	89.0	7.3	1.000200
12000.0	660.0	6.9	-16.7	16.6	820.3	652.3	106.2	6.9	1.000191
12500.0	647.9	6.8	-20.0	12.5	805.5	652.1	122.7	7.0	1.000185
13000.0	636.0	6.9	-20.6	11.9	790.6	652.2	136.7	7.4	1.000182
13500.0	624.3	7.0	-21.2	11.2	775.9	652.3	142.2	7.9	1.000178
14000.0	612.8	6.3	-21.9	11.0	763.4	651.5	140.3	8.0	1.000175
14500.0	601.5	5.3	-22.7	11.0	752.1	650.3	134.9	8.4	1.000172
15000.0	590.4	4.2	-23.6	11.0	741.1	649.0	127.5	9.4	1.000170
15500.0	579.5	3.0	-24.6	11.0	730.7	647.5	128.2	10.2	1.000167
16000.0	568.6	2.2	-24.9	11.3	719.1	646.6	133.5	11.1	1.000164
16500.0	558.0	1.5	-25.0	11.8	707.5	645.8	137.1	11.4	1.000162
17000.0	547.5	.7	-25.4	12.0	696.2	644.9	140.0	11.4	1.000159
17500.0	537.2	-.2	-26.1	12.0	685.3	643.8	138.5	10.9	1.000156
18000.0	527.0	-1.1	-26.8	12.0	674.6	642.7	133.9	10.1	1.000154
18500.0	517.1	-2.0	-27.5	12.0	664.0	641.6	132.0	8.9	1.000151
19000.0	507.3	-2.9	-28.3	12.0	653.7	640.6	131.4	7.5	1.000149
19500.0	497.7	-3.6	-28.9	12.1	643.5	639.5	134.5	6.9	1.000146
20000.0	488.1	-4.8	-29.3	12.5	633.3	638.3	139.3	6.7	1.000144
20500.0	478.7	-5.7	-29.7	13.0	623.4	637.2	144.1	7.8	1.000142
21000.0	469.5	-6.7	-30.1	13.4	613.6	636.0	147.5	9.2	1.000139
21500.0	460.5	-7.7	-30.6	13.8	604.0	634.9	140.6	10.9	1.000137
22000.0	452.5	-8.8	-31.5	13.7	594.7	633.6	145.7	12.6	1.000135
22500.0	442.7	-10.0	-32.9	13.3	585.8	632.1	143.5	14.4	1.000133
23000.0	434.0	-11.2	-34.2	12.8	577.0	630.6	141.7	16.3	1.000130

STATION ALTITUDE 3997.30 FEET MSL
10 SEP. 79 2000 HRS MST
ASCENSION NO. 302

UPPER AIR DATA
2530060302
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 9 Cont.

GEOMETRIC PRESSURE ALTITUDE MSL FEET	TEMPERATURE AIR DEPOINT DEGREES	REL.HUM. PERCENT	SPEED OF WIND KNOTS	WIND DATA DIRECTION DEGREES(TN)	INDEX OF REFRACTION
MMILLIBARS	DEGREES	CENTIGRADE	METER KNOTS	MM/SEC	
23500.0	425.6	-12.4	-35.6	12.3	142.3
24000.0	417.2	-13.6	-36.8	12.1	143.6
24500.0	408.9	-15.0	-37.5	12.5	145.1
25000.0	400.8	-16.3	-38.2	13.0	147.0
25500.0	392.7	-17.5	-38.9	13.5	148.1
26000.0	384.8	-18.8	-39.5	14.0	148.4
26500.0	377.0	-20.0	-40.2	14.5	148.1
27000.0	369.4	-21.3	-40.9	15.0	147.0
27500.0	361.8	-22.1	-41.9	14.6	148.3
28000.0	354.4	-22.9	-42.8	14.2	152.3
28500.0	347.1	-23.9	-43.7	14.0	158.9
29000.0	339.9	-25.2	-44.8	14.0	167.9
29500.0	332.9	-26.5	-45.8	14.0	174.9
30000.0	326.0	-27.8	-46.9	14.0	180.9
30500.0	319.1	-29.1	-48.0	14.0	184.0
31000.0	312.4	-30.4	-49.1	14.0	187.4
31500.0	305.8	-31.7	-50.1	14.0	187.9
32000.0	299.3	-32.9	-51.2	14.0	187.1
32500.0	292.8	-34.0	-52.3	14.0	184.5
33000.0	286.5	-35.2	-53.4	14.0	180.3
33500.0	280.4	-36.3	-54.5	14.0	179.9
34000.0	274.3	-37.4	-55.6	14.0	167.2
34500.0	268.3	-38.2	-56.4	14.0	196.9
35000.0	262.4	-38.9	-57.2	14.0	212.1
35500.0	256.7	-39.7	-58.0	14.0	11.2
36000.0	251.1	-40.5	-58.8	14.0	1.0
36500.0	245.5	-41.6	-59.6	14.0	1.0
37000.0	240.1	-42.8	-60.4	14.0	1.0
37500.0	234.7	-43.9	-61.2	14.0	1.0
38000.0	229.5	-44.7	-62.0	14.0	1.0
38500.0	224.3	-45.6	-62.8	14.0	1.0
39000.0	219.2	-46.5	-63.6	14.0	1.0
39500.0	214.2	-47.5	-64.4	14.0	1.0
40000.0	209.3	-48.4	-65.2	14.0	1.0
40500.0	204.6	-49.3	-66.0	14.0	1.0
41000.0	200.0	-50.2	-66.8	14.0	1.0
41500.0	195.3	-51.2	-67.6	14.0	1.0
42000.0	190.8	-52.2	-68.4	14.0	1.0
42500.0	186.3	-53.2	-69.2	14.0	1.0
43000.0	182.0	-54.2	-70.0	14.0	1.0

* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3997.30 FEET MSL
10 SEP. 79 1000 HRS NST
ASCENSION NO. 302

UPPER AIR DATA
2530060302
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 9 Cont.

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
43500.0	177.8	-55.3		284.2	575.1	276.9	24.8	1.000063	
44000.0	173.5	-56.4		278.8	573.6	277.6	23.4	1.000062	
44500.0	169.4	-57.5		273.6	572.1	277.4	21.9	1.000061	
45000.0	165.3	-58.6		268.4	570.7	277.1	20.4	1.000060	
45500.0	161.4	-59.7		263.3	569.2	272.4	19.1	1.000059	
46000.0	157.5	-60.8		258.4	567.7	266.6	18.0	1.000058	
46500.0	153.6	-61.9		253.5	560.3	265.9	17.5	1.000056	
47000.0	150.1	-63.0		246.8	564.8	267.5	17.3	1.000055	
47500.0	146.4	-63.9		243.7	563.0	268.6	17.4	1.000054	
48000.0	142.8	-64.8		238.7	562.4	268.9	17.8	1.000053	
48500.0	139.3	-65.7		233.8	561.2	268.9	18.3	1.000052	
49000.0	135.8	-66.6		229.1	559.9	266.2	18.3	1.000051	
49500.0	132.5	-67.5		224.4	558.7	263.6	18.4	1.000050	
50000.0	129.2	-68.3		219.7	557.6	268.4	18.0	1.000049	
50500.0	126.0	-68.9		214.8	556.8	274.8	17.6	1.000048	
51000.0	122.8	-69.5		210.1	555.9	280.9	16.8	1.000047	
51500.0	119.7	-70.1		205.4	555.1	287.4	15.7	1.000046	
52000.0	116.7	-70.7		200.8	554.5	293.1	14.2	1.000045	
52500.0	113.7	-71.4		196.4	553.4	296.4	11.7	1.000044	
53000.0	110.9	-72.0		192.0	552.6	301.4	9.2	1.000043	
53500.0	108.1	-72.2		187.4	552.3	306.0	8.8	1.000042	
54000.0	105.3	-72.0		182.4	552.6	312.2	8.5	1.000041	
54500.0	102.7	-71.7		177.6	552.9	312.8	8.9	1.000040	
55000.0	100.1	-71.0		172.9	553.2	311.6	9.6	1.000039	
55500.0	97.5	-71.8		168.7	552.6	312.0	10.1	1.000038	
56000.0	95.0	-72.1		164.7	552.4	318.5	10.2	1.000037	
56500.0	92.6	-72.4		160.7	552.0	324.8	10.4	1.000036	
57000.0	90.3	-72.3		156.6	552.1	338.2	9.8	1.000035	
57500.0	88.0	-70.3		151.2	554.8	357.5	9.5	1.000034	
58000.0	85.8	-69.4		146.7	556.1	37.1	9.9	1.000033	
58500.0	83.7	-68.7		142.5	557.1	47.4	9.5	1.000032	
59000.0	81.6	-68.0		138.5	55d.1	72.9	11.6	1.000031	
59500.0	79.6	-67.2		134.6	559.0	88.0	13.6	1.000030	
60000.0	77.6	-66.5		130.8	560.0	99.2	15.1	1.000029	
60500.0	75.6	-65.9		127.2	560.8	108.0	16.9	1.000028	
61000.0	73.8	-65.5		123.8	561.3	112.2	17.9	1.000027	
61500.0	72.0	-65.2		120.6	561.8	116.0	19.0	1.000026	
62000.0	70.2	-64.8		117.4	562.3	118.9	19.4	1.000025	
62500.0	68.5	-63.9		114.0	563.6	121.4	19.3	1.000025	
63000.0	66.9	-62.8		110.7	565.0	124.0	19.1	1.000025	

STATION ALTITUDE 3997.30 FEET MSL
 10 SEP. 79 1000 HRS MST
 ASCENSION NO. 302

UPPER AIR DATA
 2530060302
 S M R

GEOMETRIC PRESSURE TEMPERATURE REL.HUM.
 ALTITUDE AIR DEPOINT PERCENT
 MSL FEET MILLIBARS DEGREES CENTIGRADE

				DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
63500.0	65.2	-61.8	107.5	566.4	124.3	15.4	1.000024	
64000.0	63.7	-60.7	104.4	567.8	124.7	11.6	1.000023	
64500.0	62.1	-59.7	101.4	569.2	124.5	9.3	1.000023	
65000.0	60.6	-58.7	98.5	570.6	123.0	9.0	1.000022	
65500.0	59.2	-58.3	96.0	571.0	121.3	8.7	1.000021	
66000.0	57.8	-58.2	93.6	571.2	119.0	9.8	1.000021	
66500.0	56.4	-58.0	91.3	571.4	117.1	11.3	1.000020	
67000.0	55.1	-57.8	89.1	571.7	115.6	12.6	1.000020	
67500.0	53.8	-57.6	86.9	571.9	113.0	12.4	1.000019	
68000.0	52.5	-57.5	84.8	572.2	110.3	12.1	1.000019	
68500.0	51.2	-57.3	82.7	572.4	108.5	12.0	1.000018	
69000.0	50.0	-57.1	80.7	572.6	108.6	12.1	1.000018	
69500.0	48.9	-56.9	78.7	572.9	108.6	12.2	1.000018	
70000.0	47.7	-56.7	76.8	573.2	108.0	12.3	1.000017	
70500.0	46.6	-56.5	74.9	573.5	106.9	12.4	1.000017	
71000.0	45.5	-56.3	73.1	573.7	105.8	12.6	1.000016	
71500.0	44.5	-56.0	71.3	574.0	104.0	13.1	1.000016	
72000.0	43.4	-55.8	69.6	574.3	102.0	13.9	1.000015	
72500.0	42.4	-55.6	67.9	574.6	100.3	14.7	1.000015	
73000.0	41.4	-55.4	66.2	574.9	99.3	15.1	1.000015	
73500.0	40.4	-55.2	64.6	575.2	98.5	15.4	1.000014	
74000.0	39.5	-55.0	63.1	575.4	97.8	15.7	1.000014	
74500.0	38.6	-54.8	61.5	575.7	95.5	14.6	1.000014	
75000.0	37.7	-54.6	60.0	576.0	92.4	13.6	1.000013	
75500.0	36.8	-54.3	58.6	576.3	88.6	12.4	1.000013	
76000.0	35.9	-54.1	57.2	576.6	89.0	12.3	1.000013	
76500.0	35.1	-53.9	55.8	576.8	90.2	12.4	1.000012	
77000.0	34.3	-53.7	54.4	577.1	91.4	12.5	1.000012	
77500.0	33.5	-53.5	53.1	577.4	91.6	13.8	1.000012	
78000.0	32.7	-53.3	51.8	577.7	91.2	15.6	1.000012	
78500.0	31.9	-53.1	50.5	578.0	91.0	17.7	1.000011	
79000.0	31.2	-52.8	49.3	578.2	91.1	19.0	1.000011	
79500.0	30.5	-52.6	48.1	578.5	91.6	19.7	1.000011	
80000.0	29.7	-52.3	46.9	578.9	92.0	20.3	1.000010	
80500.0	29.1	-51.8	45.8	579.6	93.5	20.7	1.000010	
81000.0	28.4	-51.3	44.6	580.3	97.1	20.8	1.000010	
81500.0	27.8	-50.8	43.5	580.9	100.7	20.9	1.000010	
82000.0	27.1	-50.3	42.4	581.6	103.8	21.0	1.000009	
82500.0	26.5	-49.8	41.4	582.2	101.9	21.3	1.000009	
83000.0	25.9	-49.3	40.3	582.9	100.1	21.7	1.000009	

TABLE 9 Cont.

STATION ALTITUDE 3997.30 FEET MSL
 10 SEP. 79 1000 HRS MST
 ASCENSION NO. 302

UPPER AIR DATA
 2530060302
 S M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

TABLE 9 Cont.

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SOUND SPEED KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
83500.0	25.3	-48.8		39.3	583.5	98.3	22.0	1.000009
84000.0	24.8	-48.3		38.4	584.2	96.4	22.3	1.000009
84500.0	24.2	-47.8		37.4	584.8	94.5	22.5	1.000008
85000.0	23.7	-47.3		36.5	585.5	92.6	22.8	1.000008
85500.0	23.1	-46.8		35.6	586.1	91.5	23.1	1.000008
86000.0	22.6	-46.3		34.7	586.8	91.0	23.4	1.000008
86500.0	22.1	-45.8		33.8	587.4	90.5	23.7	1.000008
87000.0	21.6	-45.3		33.0	588.1	90.2	23.8	1.000007
87500.0	21.1	-44.8		32.2	588.7	90.8	23.3	1.000007
88000.0	20.6	-44.3		31.4	589.4	91.3	22.7	1.000007
88500.0	20.1	-43.8		30.6	590.0	91.9	22.1	1.000007
89000.0	19.7	-43.5		29.9	590.3	90.7	22.4	1.000007
89500.0	19.3	-43.5		29.2	590.4	89.5	22.6	1.000006
90000.0	18.8	-43.4		28.6	590.5	88.3	22.9	1.000006
90500.0	18.4	-43.3		27.9	590.6	88.6	22.8	1.000006
91000.0	18.0	-43.2		27.3	590.7	90.0	22.5	1.000006
91500.0	17.6	-43.2		26.7	590.8	91.5	22.2	1.000006
92000.0	17.2	-43.1		26.1	590.9	93.6	22.1	1.000006
92500.0	16.8	-43.0		25.5	591.0	98.0	22.7	1.000006
93000.0	16.5	-42.9		24.9	591.1	103.0	23.5	1.000006
93500.0	16.1	-42.9		24.4	591.2	107.2	24.4	1.000005
94000.0	15.7	-42.8		23.8	591.3	108.5	25.1	1.000005
94500.0	15.4	-42.7		23.3	591.4	109.2	25.7	1.000005
95000.0	15.1	-42.6		22.8	591.5	109.4	26.3	1.000005
95500.0	14.7	-42.6		22.2	591.6			
96000.0	14.4	-42.5		21.7	591.7			
96500.0	14.1	-42.4		21.3	591.8			
97000.0	13.8	-42.3		20.8	591.9			

STATION ALTITUDE 3497.30 FEET MSL
10 SEP. 79 1000 HRS MST
ASCENSION NO. 302

MANDATORY LEVELS
2530060302
S M R

TABLE 10

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE DEGREES	REL.HUM.		WIND DATA	
			AIR DEGREES	DEWPNT CENTIGRADE	PERCENT	DIRECTION DEGREES (TN)
850.0	4993.	21.7	6.8	38.	148.2	3.5
800.0	6707.	17.5	5.7	46.	159.1	7.6
750.0	8505.	13.7	3.8	51.	111.0	9.5
700.0	10397.	8.7	1.4	60.	70.3	11.5
650.0	12399.	6.8	-19.9	13.	119.9	6.9
600.0	14552.	5.2	-22.8	11.	133.9	8.5
550.0	16861.	.9	-25.2	12.	139.3	11.4
500.0	19352.	-3.6	-28.8	12.	133.3	7.0
450.0	22056.	-9.0	-31.8	14.	145.5	12.8
400.0	25005.	-16.0	-38.3	13.	147.1	16.2
350.0	28251.	-23.5	-43.3	14.	155.1	17.6
300.0	31881.	-32.8			187.2	15.0
250.0	36017.	-40.6			236.6	12.1
200.0	40894.	-50.2			272.2	24.2
175.0	43719.	-56.0			277.5	23.9
150.0	46884.	-63.0			267.4	17.3
125.0	50509.	-69.1			276.5	17.5
100.0	54840.	-71.5			311.6	9.6
80.0	59184.	-67.4			84.3	13.3
70.0	61844.	-64.8			119.0	19.4
60.0	64979.	-58.5			122.4	8.9
50.0	68753.	-57.1			108.6	12.1
40.0	73407.	-55.1			98.3	15.5
30.0	79472.	-52.5			91.8	20.0
25.0	83373.	-48.5			97.5	22.1
20.0	88242.	-43.6			91.7	22.1
15.0	94602.	-42.6			110.0	20.3

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.